

# INDOSHNEWS

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## मेरी कलम से



कार्यस्थल पर सुरक्षा और स्वास्थ्य प्रत्येक कर्मचारी का मूल मानवाधिकार माना जाता है और सरकार उद्योगों में सुरक्षित और स्वस्थ कार्य परिस्थिति सुनिश्चित करने के लिए विभिन्न उपाय उपलब्ध कराने के लिए प्रतिबद्ध है। इन्हीं मामलों से निपटने के लिए भारत सरकार ने वर्ष २००९ में कार्यस्थल में सुरक्षा, स्वास्थ्य और पर्यावरण पर राष्ट्रीय नीति की घोषणा की। देश में रोक-थाम सम्बन्धी सुरक्षा और स्वास्थ्य संस्कृति का निर्माण और संघारित करना ताकि कार्यस्थल से खतरों दूर हो सके तथा देश के आर्थिक गतिविधि वाले क्षेत्रों में कार्यरत सभी कर्मचारियों के कल्याण में वृद्धि हो, राष्ट्रीय नीति का एक लक्ष्य है।

इंडोशन्यूज़ के इस अंक में इससे संबंधित दो लेख हैं। पहला लेख उद्योगों में रोक-थाम सम्बन्धी सुरक्षा और स्वास्थ्य संस्कृति के महत्व पर विस्तृत चर्चा करता है। यह लेख उद्योगों में व्यावसायिक सुरक्षा और स्वास्थ्य स्थिति को आंकने के लिए मौजूद व्यावसायिक सुरक्षा और स्वास्थ्य के महत्वपूर्ण संकेतकों की रूपरेखा प्रस्तुत करता है। दूसरा लेख कार्य पर्यावरण में विषाक्त रसायनों के हवा में उत्सर्जन से संबंधित स्वास्थ्य समस्याओं के बारे में विस्तार से चर्चा करता है। दूसरा लेख क्षेत्रीय श्रम संस्थान, कोलकाता द्वारा पर्यावरण निगरानी और व्यावसायिक स्वास्थ्य व जीव-रसायन पर किए गये अध्ययन पर आधारित है।

मैं आशा करता हूँ कि प्रस्तुत जानकारी से उद्योग लाभान्वित होंगे।

## FROM THE DESK

Safety and health at workplace are to be considered as fundamental human rights of every employee and government is committed to provide all measures to ensure safe and healthy working condition in industries. To address these issues, Government of India declared the National Policy on Safety, Health and Environment at work place in 2009. One of the goals of the national policy is to build and sustain preventive safety and health culture in the country in order to eliminate the hazards at workplace and to enhance the well being of employee in all the sectors of economic activities in our country.

This issue of INDOSHNEWS contains two articles in this regard. The first article discusses in detail the importance of preventive occupational safety and health culture in industries. The article also tries to outline the important occupational safety and health indicators available for judging the OS&H status in industries. Health problems associated with the emission of toxic materials in the working environments are discussed in details in the second article. The second article is based on the Environment Monitoring and Occupational Health and Biochemical Study conducted by the Regional Labour Institute, Kolkata.

I hope industries will take advantage of this source of information.

G.M.E.K. Raj  
Editor In-chief

## INDIAN OSH IS PRESCRIPTIVE OR PREVENTIVE? - WAY AHEAD FOR INDIA

S. Bharathi

### ABSTRACT

In this article the author has made an attempt to throw light on the importance of having preventive OSH culture in India in view of the enthusiasm being created among all stakeholders by the National Policy on Safety, Health and Environment at work place brought by the Government of India. While batting for a preventive culture, many OSH indicators for preventive and prescriptive culture are being identified and discussed in this article. Among others, the author has also identified the need for Indian OSH management standards for a successful OSH preventive culture in our Country.

### INTRODUCTION

There are many indicators available for judging the OSH status of a country which are broadly outlined in this paper. This is not an exhaustive list but offers a glimpse of such indicators which every OSH stakeholder is required to be conversant about it and its impact on his manufacturing activity. Among others, based on the impact of such indicators one can judge whether his OSH system is a prescriptive or preventive or combination of both.

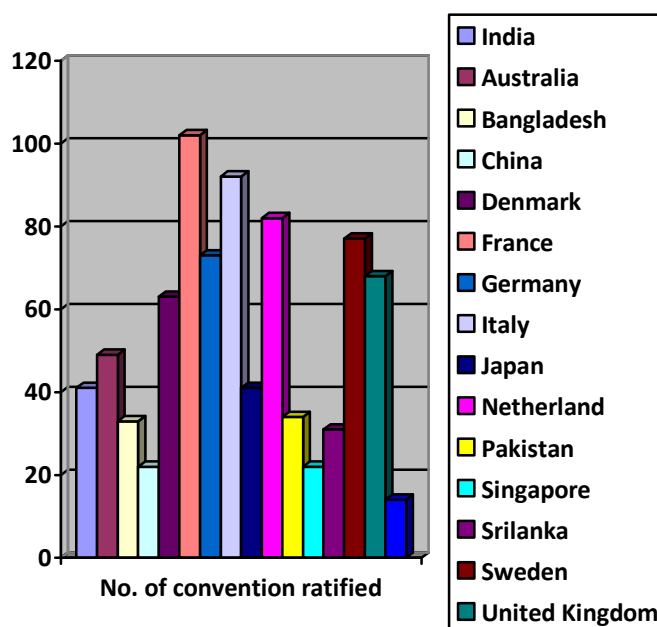
### OSH INDICATORS

The following is the select list (not exhaustive) of OSH indicators which is very useful for any Stakeholder to make a balanced assessment or to plan further.

- Number of ILO Standards ratified
- Coverage of workforce (legal, enforcement, compensation, occupational health services key subjects/ issues like
- Safety committees and representation of workers
- Well planned Management systems and strategy
- Tripartite advisory bodies
- National / International labelling system
- Hazard communication system
- Reliable accident and disease recording and notification systems
- Establishment, review, update and application of National systems for the recording and notification of occupational diseases
- Special Program on highly hazardous substance like asbestos/ pesticides
- Adequacy of inspectors / Occupational Health doctors / safety engineers / OSH professionals
- Information and knowledge centres /institutes at various levels
- Quality & adequacy of OSH education being imparted
- Level of R&D efforts by the stakeholders
- OSH inspection systems by the key stake holders
- Elimination programs on areas like child labour, silicosis, second hand smoke at work, poor hygiene in work / living conditions in Construction / SME sector
- Properly recorded fatal and disabling accident rates by gender / industry / occupation for all sectors including self-employed
- Records of compensated occupational diseases, estimates of work-related mortality for the whole work force
- Rate of absenteeism, disability status, average retirement age, etc. are among various indicators available for assessment of OSH status.

### ILO STANDARDS

The ILO has brought out 189 recommendations and 201 conventions as on Oct. 2011. The no. of ratifications of conventions made by few countries is projected below.

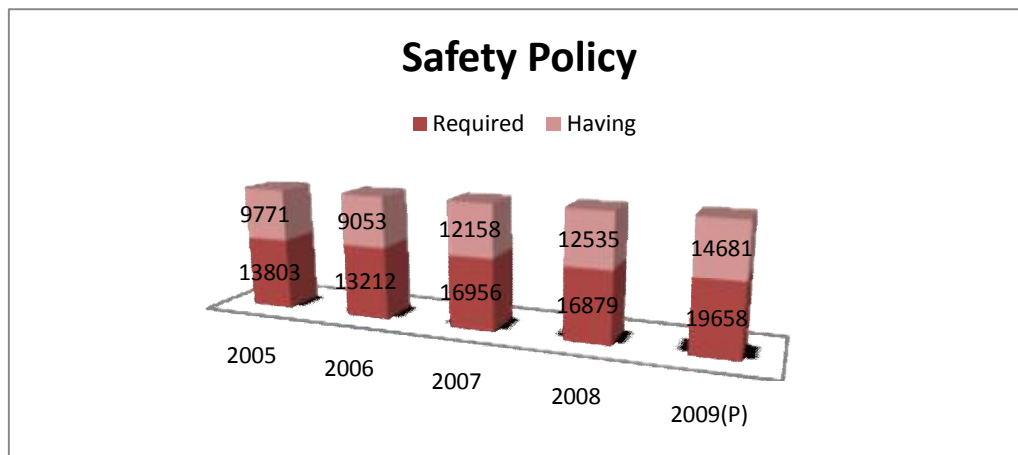
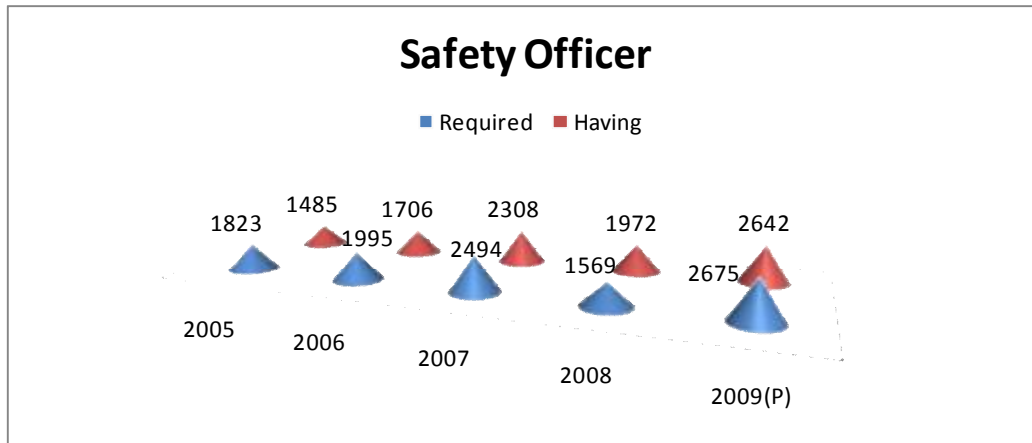
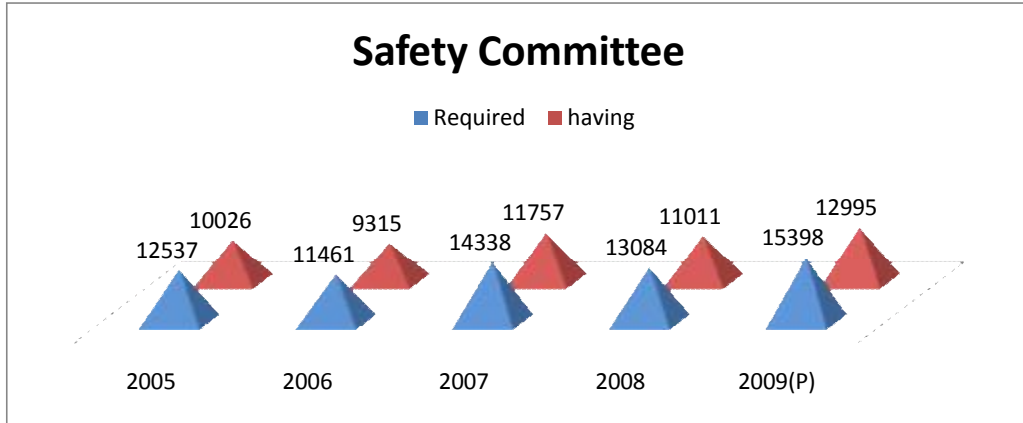


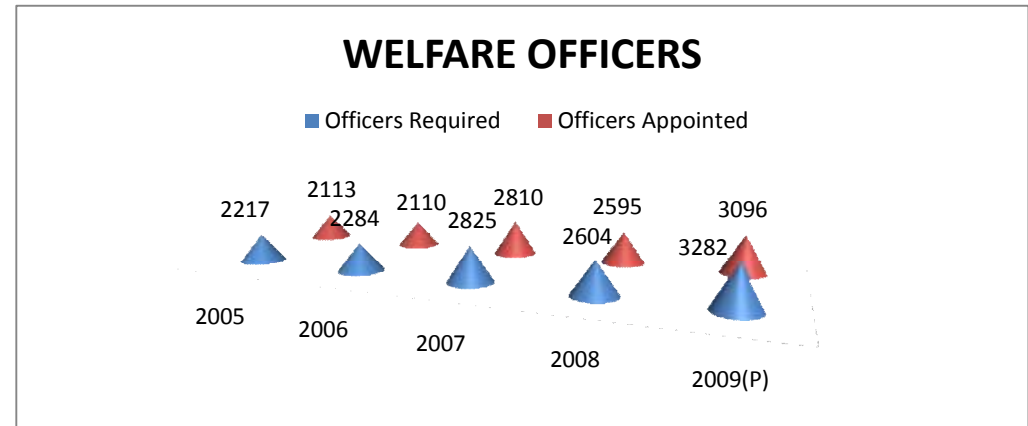
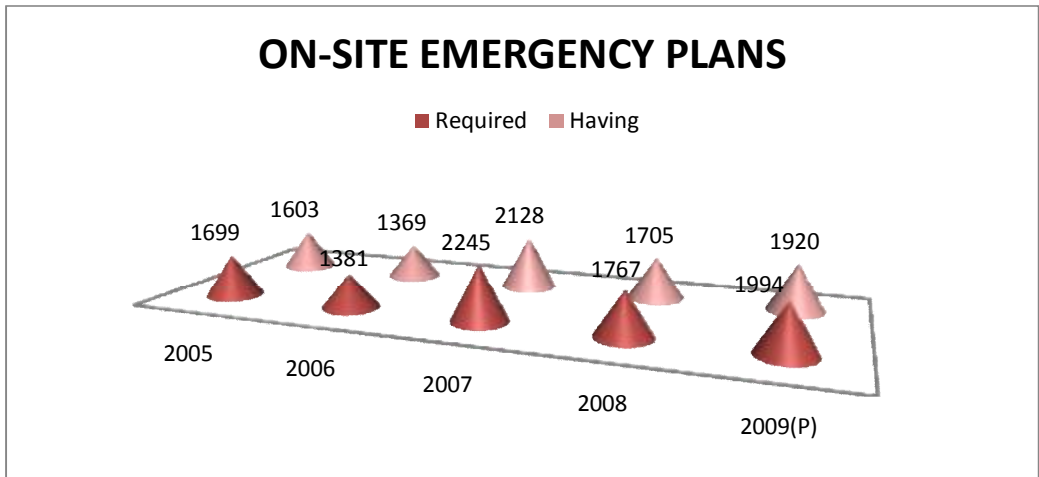
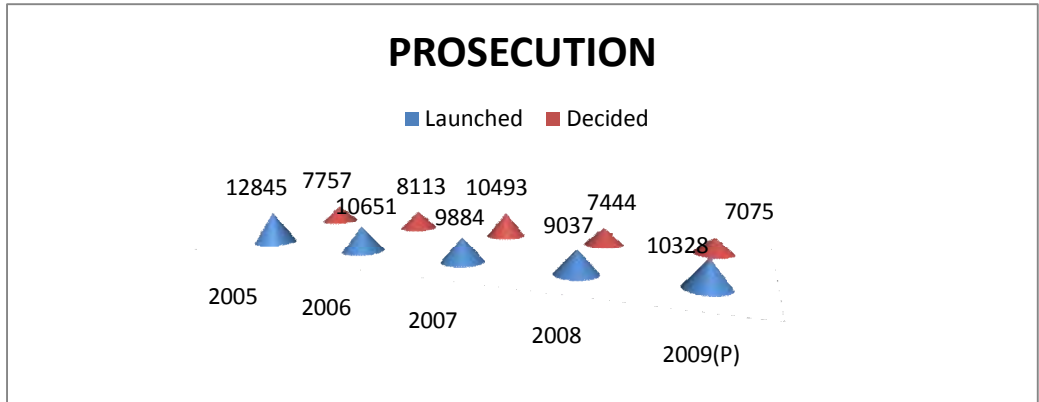
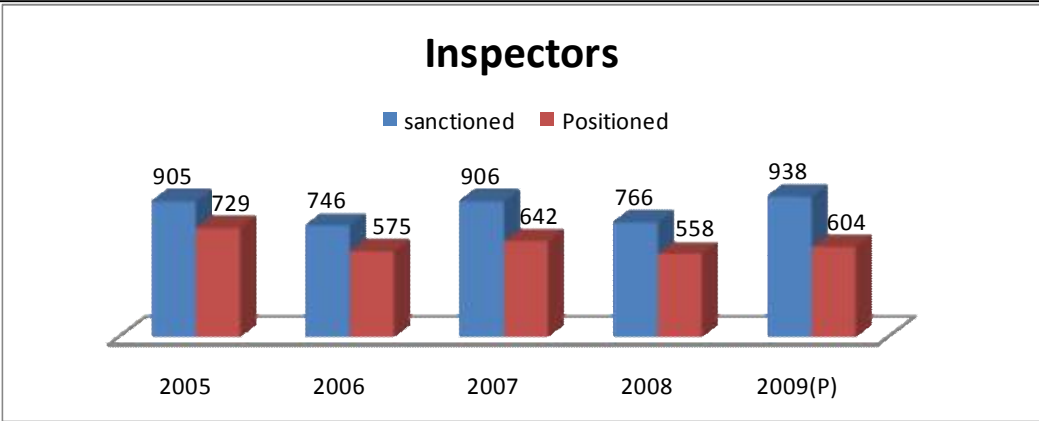
India has ratified 43 ILO standards (conventions) as on Oct. 2011 and the last ratification was made on 6/6/08. After ratification 2 conventions were later discussed (<http://labour.nic.in>). This is fairly a good success rate for a country like India to ensure preventive culture.

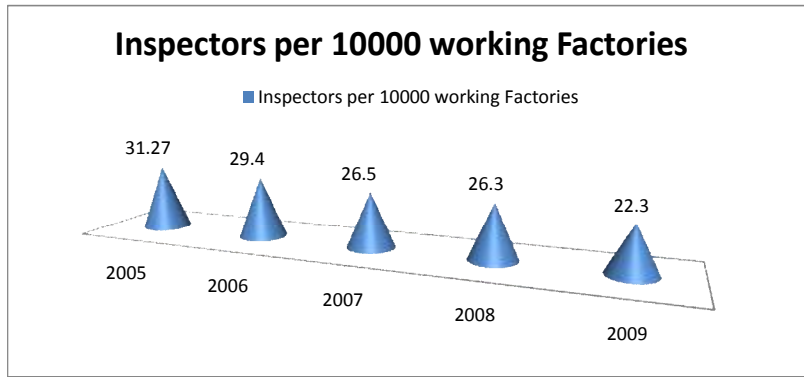
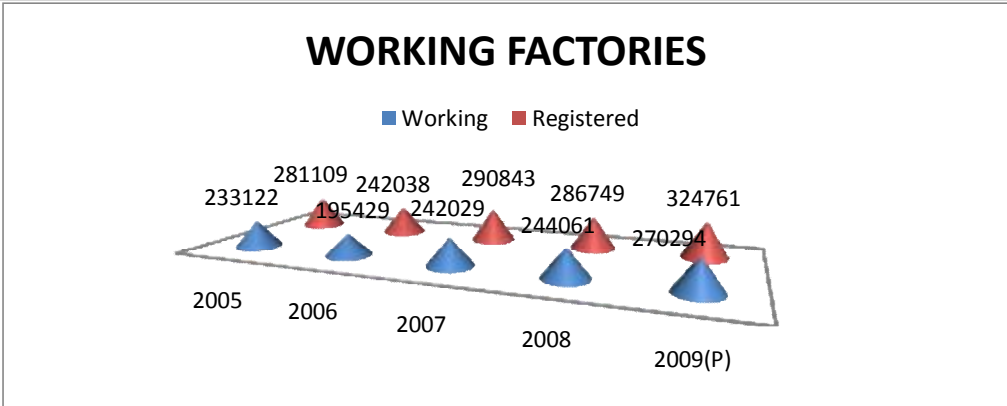
**COMPLIANCE STATUS**

This is normally carried out through traditional inspection visits by inspectorates and other authorities to promote compliance with the OSH regulations and for taking formal enforcement action, if found necessary. During the year 2010, out of 103728 total inspections, 10328 inspections resulted into prosecutions. That is 10 % of total inspections resulted into prosecutions. An increasing trend of prosecution indicates prescriptive OSH and

decreasing trend indicates preventive culture. The other aspect to look into is growing number of industries which may also push the % of prosecution upward. But the fact is that the new industries could be regulated very much at the initial stages itself by enforcing certain proactive clauses in the permit / licence itself. Rather few state governments have already practicing this type of proactive enforcement at the initial stages. The following data is also giving the extent of few compliance areas.







P-provisional

**MANAGEMENT AUDITS AND INSPECTION**

Adoption of promotion and incentive management systems on voluntary basis by the occupiers including regular process audits and facilitating inspection of the facility by internal and external agencies. More tilt towards this will improve the preventive OSH.

payment is made. Provision of training and information, increasing workers' knowledge, skills and attitudes concerning prevention will promote the inclusive growth encompassing public and private contracting agencies to maintain preventive OSH culture rather than a prescriptive one. Presently the status varies from client to client and no trend is visibly demonstrated.

**ACCREDITATION OR RECOGNITION OF OSH AGENCIES OR PROFESSIONALS**

Competent private firms or individuals to undertake audits of high-risk sites and equipments (e.g. major hazard sites, pressure vessels, lifting appliances, etc.) is becoming a volume based activity instead of value based activity. The level of competency of such firms or professionals required to be judged on national level in a uniform manner to remove disparity in competency. This is happening for port sector now. A macro shift in policy is required [to achieve this] under Factories Act / Rules so as to move towards preventive culture on this front.

**EMPLOYEE PARTICIPATION**

Employee participation is mainly carried out through the functioning of Safety committee as a proactive measure in prevention of accidents, etc. As on 2009, there are 12995 safety committees functioning in India against the requirement of 15398. Apart from this, worker representatives are not specifically required to be included in many internal / other technical committees to ensure increased participation/sustained involvement because the safety committee participation is broadly treated just as compliance to a one more legislative requirement. But there are many safety committees functioning very well. However, the percentage of absenteeism in many safety committee meetings or the level of discussion taking place in the safety committee are not meeting the purpose for which it is designed as they are inadequately trained to take part such technical discussions or worker representatives in the committee are constantly undergo replacements or they do not have better technical qualifications. Existence of other voluntary committees on house keeping, Quality, etc. are not comprehensive enough and left to the zeal of individual members. This experience shows that the

**SUPPLY CHAIN MANAGEMENT**

The occupiers are expected to exercise positive pressure and ensure that their suppliers are also able to maintain high levels of training and information and carrying out routine inspection and audits of their premises. One way of achieving this is to incorporate suitable OSH clauses in tendering process itself. Many organisations in India in their tendering process have included OSH clauses which appear to take care of liability etc. but not core OSH value. There are few industries those have included OSH performance rating as one of the criteria for assessment of performance of the outsourced activities before

preventive OSH is not having preference over prescriptive OSH in such cases.

**VALUE BASED INCENTIVES**

Practice of Value based Incentives like reduction of insurance premium, reduced interest rates on borrowing for cleaner / substitute technology, national rating of the industries based on their preventive OSH performance indicators and according special status / benefits to such voluntary performers etc will push the Indian OSH more towards preventive culture. The policy makers need to take care of this aspect which will improve preventive culture.

**SOCIAL DIALOGUE MECHANISM**

The existing social dialogue mechanism for promoting OSH negotiation needs to be further regulated to have a wider reach. Representatives of governments, employers and workers at national, sectoral, Corporate and enterprise levels need to come more close to reach agreements for improving OSH issues to achieve better preventive culture. Beginnings are being made in this direction. For example in one of the states soon after the accident, a meeting is convened between the Govt. and employer through which it is being ensured that the root causes for the accident is totally eliminated / removed from that industry for ever. Time is not far away for including social partners also in such meeting. Such measures show encouraging results towards preventive OSH.

**OSH MANAGEMENT SYSTEM**

One of the ILO publication says that OSH is generally defined as the science of anticipation, recognition, evaluation and control of hazards arising in or from the workplace that could impair the health and well-being of workers, taking into account the possible impact on the surrounding communities and the general environment". Similarly in 1950, the ILO-WHO Joint Committee on Occupational Health considered that occupational health should "aim at the promotion and maintenance of the highest degree of physical, mental and social well-being of workers in all occupations". To achieve this, a well managed OSH management system is compulsory for both prescriptive and preventive accident prevention program. The associated issues which are needed to be addressed in such a system are

- Minimizing of introduction of new hazards
- Reduction of residual risks which are retained without much monitoring

- Constant changing nature of work force
- Rapid pace of scientific and technological progress
- Migrant work force including women work force
- Multi cultural work force
- Stress at work which is fairly invisible for measurement
- Aged work force
- Young workforce which is fairly informed

**CAPACITY BUILDING PROCESS**

The other important issue is that stakeholders are not able to bring the process of capacity building on fast track to suit the changing global industrial scenario. Many occupiers are holding back investment on preventive culture probably to save money in the short-term which is not a clever OSH decision. Because overall costs of accidents and ill-health are often much greater than the perceived value. OSH investment on preventive culture from the beginning itself reduces direct costs, indirect costs, absenteeism rate, insurance premia and improves engineering confidence, performance and productivity of work force. In the long run, such investments pay back the stakeholders. This is like taking insurance at an early age with reduced premium. Since the present workforce is able to work longer than our previous generations making OSH investment early will guarantee an uninterrupted healthy workforce. Such voluntary investment will take Indian OSH to a greater preventive culture.

**NATIONAL MOTIVATIONAL CAMPAIGN**

Many stakeholders including Central Government (through MOLE / DGFSALI), State Govts., National safety Council, Apex level organizations, Corporates and individual industries are having different motivational schemes and financial awards for the meritorious work on OSH front.

Such campaign may also include the following to move faster towards preventive OSH culture:

- Recognise industries for their best practice sector wise
- Recognise developers who follows good practices in their activities
- Recognise young teams for having improved OSH in an innovative way
- Recognise Officers / individuals who help to cultivate preventive OSH
- Recognise consistent performance / contributions by front line supervisors
- Recognise projects or worksites that demonstrated OSH preventive culture in a sustained manner.

**SHE AT WORK PLACE**

At operational level the preventive OSH will ensure tangible results which could be derived from a well planned strategy. For example one such strategy could be

Strategy Cycles	Tangible Results
Planning methods	Target oriented towards hazards, legislative requirements, pro active
Inspections /reviews /Check lists	Heightened awareness, Engage stake holder, sustained awareness monitoring
Corrective actions	Rectification and follow up
Likely tangible result to expect from this exercise :	
Removal of poor workplace conditions, Removal of poor workforce, Improvement of engineering confidence of work force at all levels and enhanced production with greater OSH compliance.	

**VALUE AREAS**

The preventive OSH culture is also demonstrated by following certain core values which are outlined here for the benefit of every stakeholder connected with implementation of preventive OSH.

Value Areas	Definitions
Knowledge and Competence in own sphere of work	Gained through continuous learning and a focus on building capabilities
Honesty and Integrity	Conduct must inspire respect, confidence and mutual trust
Courtesy and Respect	Due to diversified working community. Show empathy, compassion and understand needs.
Objectivity, Neutrality and fairness	Shall demonstrate impartiality, objectivity and without any bias while negotiating OSH issues.
Commitment and Response	Show commitment to the purpose and values in the work place.
Consistency between Personal and Professional Behavior	Ensure consistency both at work and in private life

**CONCLUSION**

The need is to continue promoting a national preventative OSH culture. Preventive Safety and health culture has to be placed high on national agenda simultaneously by all stake holders to increase awareness and understanding of the purpose and usefulness of OSH preventive culture. Efforts on piecemeal basis or in an isolated manner are not sufficient to meet our national goal. A preventative safety and health culture must involve all stakeholders at all levels for protecting workers health and preventing occupational accidents and diseases.

The sustained efforts made by Government of India and by all state governments and other stakeholders in making awareness on preventive OSH have resulted in shifting of emphasis from the mere prescriptive measures to preventative measures in India. This is an important milestone for the DGFASLI in setting standards in India for preventive OSH management through the newly found enthusiasm i.e. national SHE policy at work place. This assumes more importance due to our accelerated economic growth and its impact on meeting the OSH challenges in India and in view of the heightened awareness among our citizens.

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2. [www.labour.gov.in](http://www.labour.gov.in)
3. [www.dgfasli.nic.in](http://www.dgfasli.nic.in)

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**SAFETY SLOGANS**

- One safe act can lead to another.
- Dare to be aware.
- Hard hats, they're not just for decoration.
- Have another day – by being safe today!
- Hearing protection is a sound investment.

**SAFETY POSTER**



## ENVIRONMENTAL MONITORING AND MEDICAL-CUM-BIOCHEMICAL STUDY IN A MERCURY (CELL HOUSE) PLANT

DR. S. K. HALDAR  
DR. S.N.BANERJEE

**ABSTRACT**

The article is about environmental monitoring and occupational health-cum-biochemical study which was conducted in Mercury Cell House of a chemical plant. The study reveals that among the ten locations, eight locations in the cell house possess air-borne Hg-Vapour less than TLV values of 0.025mg/m<sup>3</sup>. The air-borne Hg-vopour at two locations exceeded the TLV values. Two locations among the eight locations possess the air-bore Hg-vopour nearly 0.025mg/m<sup>3</sup>. The specific signs and symptoms the workers suffered during the clinical examination are given in table No.- 6 where out of 23 workers, 7 suffered from hypersalivatio (30.43%), 2 suffered from gingivitis (8.69%) and 1 worker suffered from tremor (4.34%). Table no-2, 3 & 6 reveal that all the workers examined for clinical examination exhibited high mercury content in blood (above the permissible limit), 52% exhibited high urine mercury level (above the permissible level) and 56.52% workers showed presences of Albumin in their urine samples.

**INTRODUCTION**

The environmental pollution of mercury occurs from industrial sources and toxic waste. The toxicity of mercury is well known and it is still a serious hazard in developing countries. Inadvertent high exposure to workers can still occur through failure in control measures or awareness.

Considering all these things, an *Environment Monitoring and Occupational Health-Cum-Biochemical Study* was conducted in Mercury Cell House of a Chemical Plant by Regional Labour Institute, Directorate General Factory Advice Service and Labour Institute, Government of India, Ministry of Labour & Employment, Kolkata.

**AIMS & OBJECTIVES**

The aims and objectives of the Project were as follows:

- (i) To monitor airborne levels of mercury vapour in the work room environment of electrolytic process in cell house.
- (ii) To find out Time Weighted Average exposure of mercury among the exposed workmen.
- (iii) To evaluate the blood and urine Mercury level through suitable biochemical estimation of Mercury and compare it with the TLV of Mercury.
- (iv) Clinical examination of exposed workers to find out incidence of sign and symptoms of mercury poisoning.
- (v) To suggest remedial measures and make specific recommendations wherever necessary to improve the working conditions and thereby the health status of the workers.

**MATERIAL & METHOD**

**A. Air-Sampling:**

Air-borne mercury vapour has been sampled by drawing low volume of air through sorbent tube containing hopcolite. The sampling was carried out in cell house of the plant and locations of sampling were fixed based on workers' activities in the cell house. Details of sampling locations are given in Table no-1.

The sorbent tubes were brought back to the laboratory of the institute. The sorbent is digested using nitric and Hydrochloric acid and the levels of Hg were determined as recommended by OSHA method No.ID-140.

**B. Blood and Urine Sampling:**

Urine Samples of the exposed workers were collected on the day of study on single voided which was preserved using 1ml of Hg-free conc.HNO<sub>3</sub>.

Blood Samples were taken by venipuncture of the same time as the urine samples and sodium EDTA were added to all the blood samples. Both the blood and urine samples were brought back to laboratory of the institute for analysis.

**C. Occupational Health Study:**

Twenty five workers engaged at Cell House were selected according to the duration of exposure of Mercury vapor. Two workers were absent at the time of clinical examination. Therefore, twenty three workers were subjected to general medical examinations and investigations related to Mercury poisoning. All the twenty five workers were tested with blood for Mercury and urine for Mercury and Albumin.

**RESULTS OF THE STUDY**

**Table No. 1: Air-borne Mercury concentration level**

Locations of cell House	Levels of Mercury (mg/m <sup>3</sup> )	Permissible Level Cell House (mg/m <sup>3</sup> )
North-West Side	0.0065	0.025
South-West side	0.0170	
South-East side	0.0210	
North-East Side	0.0220	
Middle Position	0.0277	



North –Middle Side	0.0114	
East –Middle End Side	0.0098	
East-Middle Side	0.0440	
West- Middle Side	0.0098	
Middle End Side	0.0170	

**A. INDUSTRIAL HYGIENE**

**Table No. 2: Air-borne Mercury concentration level**

Workers Sl. No.	Conc. of Hg in µg/L	Permissible Level µg/L
W- 01	44.70	15.00
W- 02	34.11	
w- 03	65.88	
w- 04	16.47	
w- 05	31.76	
w- 06	09.41	
w- 07	32.94	
w- 08	20.00	
w- 09	11.76	
W- 10	03.52	
w- 11	07.05	
w- 12	21.17	
w- 13	14.11	
w- 14	24.70	
w- 15	10.58	
w- 16	21.17	
w- 17	03.52	
w- 18	32.94	
w- 19	03.52	
w- 20	03.52	
w- 21	22.35	
w- 22	03.52	
w- 23	09.41	
w- 24	03.52	
w- 25	04.70	

**Table No. 3: Mercury concentration in Blood Sample**

Workers Sl. No.	Conc of Hg in µg/L	Permissible Level µg/L
W- 01	52.00	15.00
W- 02	95.00	
w- 03	145.0	
w- 04	95.00	
w- 05	112.0	
w- 06	40.00	
w- 07	65.00	
w- 08	40.00	
w- 09	68.00	
W- 10	50.00	
w- 11	40.00	
w- 12	95.00	
w- 13	85.00	
w- 14	78.00	
w- 15	77.00	
w- 16	73.00	
w- 17	52.00	
w- 18	73.00	
w- 19	45.00	
w- 20	45.00	
w- 21	80.00	
w- 22	48.00	
w- 23	50.00	
w- 24	40.00	
w- 25	48.00	

**B. INDUSTRIAL MEDICINE**

**Table No. 4: Distribution of workers according to the duration of exposure of Mercury vapor**

Exposure in yr	<10	10-20	20-30	>30	Total
Number	4	9	8	2	23

**Table No. 5: Distribution of workers according to the signs & symptoms**

Sl. No.	Sign and symptom	Number of cases suffering from	%
1.	Hypersalivation	7	30.43
2.	Gingivitis	2	8.69
3.	Tremor	1	4.34

**Table No. 6: Distribution of workers according to the signs & symptoms**

Sl. No.	Investigation	Number of cases	Total No. of Workers	%
1.	Albumin in Urine	13	23	56.52
2.	High Mercury in Urine (above the permissible limit)	13	25	52
3.	High Mercury in Blood (above the permissible limit)	25	25	100

**RECOMMENDATIONS**

1. Effective maintenance of the cells is very much needed to avoid exposure of the workmen to Mercury vapour which is very much toxic to human.
2. Workers must be motivated to use gas mask or respirator while on job and in no case maintenance job should be permitted without personal protective equipment.
3. It is necessary to make the cell house workmen aware of the hazards from the process, appropriate emergency procedures and precautions for safe use of mercury.
4. A system is to be evolved so that all the workmen of the plants are subjected to periodic medical examination once in a year with an objective to identify cases of mercury poisoning arising during the course of employment.
5. Periodic monitoring of airborne mercury vapour should be carried out in the cell house, This will help in detecting the fluctuations in the levels of airborne contaminant.
6. First aid trained personnel with all the First aid equipment including rescue measures should be available while the cell house is in operation.
7. Good general ventilation should be maintained in the cell house.
8. Workmen engaged in cell house should have to maintain good personal hygiene.

6. Industrial Hygiene-By Robert W. Allen Michael D. Ells Andrew W. Hard
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**QUOTABLE QUOTES**

- Ignoring a warning can cause much mourning.
- Report unsafe behavior. You are your brother's keeper – from Joe Bettencourt
- There's no place like home. Let's get there safely – from Debbie Finch
- In case of injury remember "rice"- rest, ice, compress and elevate.
- "Safety at home, Safety at work. Two simple ways, NOT to get hurt.
- Have another day – by being safe today!
- Have your chimney inspected by a professional before each heating season.

**THE THIRD NATIONAL EXHIBITION OF BOOKS AND FILMS ON OCCUPATIONAL SAFETY, HEALTH & ENVIRONMENT AT REGIONAL LABOUR INSTITUTE, CHENNAI ON 29<sup>TH</sup> APRIL, 2011**



Seated from left to right: Shri K.Balasubramanian, Director (Safety), RLI, Chennai; Shri Balasundaram Radhakrishnan, Vice President (Manufacturing), M/s.Ford India Pvt. Ltd., Chennai; Shri G.M.E.K. Raj, Director General, DGFASLI, Mumbai and Dr.R.K.Elangovan, Director (Safety) & In-charge, RLI, Chennai. On the podium: Dr.T.Prabhakara Rao IAS, Principal Secretary to Government, Labour and Employment Department, Government of Tamilnadu.

The Third National Exhibition of Books and Films on Occupational Safety, Health and Environment (OSHE) was organized by Regional Labour Institute, Chennai in collaboration with Central Labour Institute, Mumbai at Chennai on April 29, 2011. The exhibition was inaugurated by the Chief Guest Dr.T.Prabhakara Rao IAS, Principal Secretary to Government, Labour and Employment Department, Government of Tamilnadu.

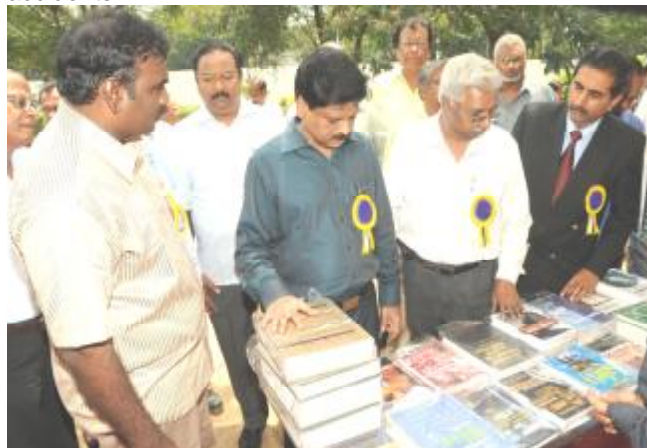
The function started with a song of invocation and lighting of the lamp by the Chief Guest Dr.T.Prabhakara Rao, IAS. Dr.T.Prabhakara Rao IAS, in his inaugural speech highlighted the need for improving the occupational safety, health and environment in industries. He explained the various steps taken by the State Government to ensure Occupational Safety, Health and Environment at Workplace. He said that committees at different levels such as state level, district level and panchayat level have been set up by the State Government to address the issue. He thanked DGFASLI and the Govt. of India for organizing such programmes in Chennai and suggested the need for organizing such programmes even in district levels and the state government will render full support, he assured. He also stressed the need focusing Occupational Safety and Health of construction workers at the construction sector which requires our immediate attention to create awareness among the construction workers.

Shri G.M.E.K.Raj, Director General, Directorate General Factory Advice Service and Labour Institutes, Mumbai, Ministry of Labour and Employment, Government of India, delivered the presidential address. In his Presidential Address, Shri G.M.E.K.Raj, Director General, explained briefly the various activities carried out by the Directorate General Factory Advice Service and Labour Institutes (DGFASLI). He said that DGFASLI is an attached office

of Ministry of Labour and Employment, Government of India to serve as a technical arm to assist the Ministry in formulating National Policies on Occupational Safety and Health and to advise the State Governments, factories and other stakeholders on matters concerning Safety, Health and well being of persons at work.

DGFASLI also enforces safety and health statutes in the major ports of the country and in order to realize this objective, DGFASLI carries out regular training programmes, consultancy services, field studies, audits, surveys and other promotional activities covering various Occupational Safety and Health issues, he said. He further said that the Regional Labour Institute, Chennai is one of the subordinate offices of DGFASLI established with the objective of providing technical advice to the State Governments and to provide services to the industries located in the Southern part of the country. The Regional Labour Institute, Chennai has also been declared as a Centre of Excellence for Construction Industries. A Risk Observatory Cell has been set up at Regional Labour Institute, Chennai which is the first of its kind in India in a government set up to discuss and support Risk Management aspects in industries.

Shri Balasundaram Radhakrishnan, Vice President (Manufacturing), M/s.Ford India Pvt. Ltd., Chennai delivered Key Note Address. He said that enforcement through different types of activities is extremely essential to ensure high level of discipline in safety. Film shows are a very good tool for safety education. He explained the various best practices that are followed in Ford India company. Effective communication system and recording of accidents, analyzing the accidents through discussion are very much essential to avert recurrence of such accidents.



Dr.T.Prabhakara Rao, IAS, (in green shirt), Principal Secretary to Government, Labour and Employment Department, Government of Tamilnadu visiting the bookstalls after the inauguration of book exhibition alongwith the Officers and staff of RLI, Chennai and DGFASLI, Mumbai and other guests..

Dr.R.K.Elangovan, Director (Safety) In-Charge, Regional Labour Institute, Chennai, welcomed the Chief Guest Dr.T.Prabhakara Rao, IAS, Principal Secretary to Government, Labour & Employment Department, Government of Tamilnadu and other delegates. He thanked the Principal Secretary for his readily agreeing to inaugurate the 3<sup>rd</sup> National Exhibition of Books and Films

on Occupational Safety, Health and Environment (OSHE). He also thanked for the active support rendered by him in implementing the various safety measures in industries located in Tamilnadu.

While welcoming Shri G.M.E.K.Raj, Director General, DGFASLI, Mumbai. Dr.R.K.Elangovan also welcomed Shri Balasundaram Radhakrishnan, Vice President (Manufacturing), M/s.Ford India Pvt. Ltd., Chennai and thanked him.

In the Book Exhibition, ten Publishers and book-sellers of various safety related books and producers of safety related films, participated in the exhibition and displayed their books/CDs in the exhibition. In the exhibition, about twenty films on OSH have been screened. A total number of two hundred and five participants comprising of management executives, workers, trade union leaders, workers, medical officers, factory inspectors and educational institutions attended the exhibition. The films were educative and spanned over various topics related to Occupational Safety and health.

During the Inaugural Function, a film on *Silicosis – A Killer Disease* produced by DGFASLI, Mumbai was screened as an inaugural film.

Shri K.Balasubramanian, Director (Safety) proposed Vote of Thanks. He thanked the Chief Guest for extending his support in the noble cause of Occupational Safety, Health and Environment at Workplace. He thanked the Director General, DGFASLI, Mumbai. He also thanked the delegates for their co-operation in making the exhibition a grand success. He also thanked the publishers and producers of films who have actively participated in the Exhibition.

### INVITING ARTICLE FOR INDOSHNEWS

INDOSHNEWS is a quarterly newsletter that facilitates exchange of ideas and data developed through research, study and surveys in the areas of occupational safety and health. DGFASLI invites articles from individuals, industry, industrial associations, trade unions, professional bodies etc. having information on OS&H and willing to share the same with others at the national and international level.

1. Manuscripts for publication should be typed in double space within 3 to 4 A4 size sheets only on one side of the paper and sent in duplicate to the Editor-in-Chief.
2. Once the manuscripts are accepted for publication, publisher reserves the right to make editorial changes as may be necessary to make the article suitable for publication; and publisher reserves the right not to proceed with publication for whatever reason.
3. Authors should take care to ensure the accuracy of data and reference.

### डीजीफासली की एक झलक

कारखाना सलाह सेवा और श्रम संस्थान महानिदेशालय (डीजीफासली) भारत सरकार के श्रम और रोजगार मंत्रालय का एक सम्बद्ध कार्यालय है। कारखानों और गोदियों में व्यावसायिक सुरक्षा और स्वास्थ्य से सम्बन्धित राष्ट्रीय नीतियां बनाने में एक तकनीकी पक्ष के रूप में मंत्रालय की सहायता करने के लिए तथा कार्यस्थल पर कामगारों की सुरक्षा, स्वास्थ्य, दक्षता और कल्याण संबंधी मामलों पर राज्य सरकारों और कारखानों को परामर्श देने के लिए भारत सरकार के श्रम मंत्रालय के अधीन डीजीफासली का गठन १९४५ में किया गया था। यह देश के प्रमुख पत्तनों पर सुरक्षा और स्वास्थ्य विधानों का प्रवर्तन भी करता है।

कारखाना सलाह सेवा और श्रम संस्थान महानिदेशालय (डीजीफासली) की संरचना में निम्नलिखित शामिल है :-

- मुंबई स्थित मुख्यालय
- मुंबई स्थित केंद्रीय श्रम संस्थान
- कोलकाता, चेन्नई, फरीदाबाद और कानपुर स्थित क्षेत्रीय श्रम संस्थान

डीजीफासली की संकल्पना:- सभी के लिए कारखानों और पत्तनों में कार्यस्थल पर सुरक्षा और स्वास्थ्य सुनिश्चित करने के लिए ज्ञान का सृजन, नीतियां बनाने, मानक और व्यवहार में उत्कृष्ट संगठन के रूप में स्थापित होना डीजीफासली की संकल्पना है।

डीजीफासली का उद्देश्य:- डीजीफासली का उद्देश्य भागीदारी, मार्गदर्शन, विशिष्ट क्षेत्रों में नियामक क्रियाकलापों के माध्यम से कारखानों और पत्तनों में सुरक्षित और स्वस्थ कार्यस्थल के लिए व्यावसायिक सुरक्षा और स्वास्थ्य में सुविज्ञता उपलब्ध कराना, और सूचनाओं का आदान-प्रदान करना डीजीफासली का उद्देश्य है।

डीजीफासली संगठन में मुंबई स्थित मुख्यालय, मुंबई स्थित केन्द्रीय श्रम संस्थान, चेन्नई, कानपुर, कोलकाता और फरीदाबाद स्थित चार क्षेत्रीय श्रम संस्थान तथा मुंबई, जवाहर लाल नेहरू पोर्ट, कांडला, मार्मुगांव, न्यू मैंगलोर, चेन्नई, तूतीकोरिन, कोच्चि, विशाखापट्टनम, कोलकाता और पारादीप स्थित ग्यारह गोदी सुरक्षा निरीक्षणालय हैं। डीजीफासली संगठन में लगभग १२९ अधिकारियों ( इंजीनियर, फिजीशियन, औद्योगिक हाइजिनिस्ट, शरीर वैज्ञानिक, एर्गोनॉमिस्ट, औद्योगिक मनोचिकित्सक, कर्मशियल आर्टिस्ट आदि ) और ८१ तकनीकी कर्मचारी सदस्यों का बहुआयामी दल है। डीजीफासली और केन्द्रीय श्रम संस्थान, मुंबई में विभिन्न विशिष्ट प्रभाग/स्कंध सम्मिलित हैं। यह संगठन आगे, विकास और बढ़ती मांग को पूरा करने के लिए तत्पर है। विकासशील देश में जहां विभिन्न और जटिल प्रक्रिया उद्योग बड़ी संख्या में विद्यमान है वहां कामगारों की सुरक्षा और संरक्षण एक कठिन कार्य है। तकनीक, औद्योगिक समाज की साख और समर्पित कर्मचारियों की शक्ति से सज्जित संगठन आने वाले कल की चुनौतियों को पूरा करने में सक्षम है। यह कार्यस्थल को सुरक्षित बनाने के लक्ष्य के लिए कृतसंकल्प है।

वेबसाइट : [www.dgfasli.nic.in](http://www.dgfasli.nic.in) देखें।

**CENTRAL LABOUR INSTITUTE: MUMBAI**

During the quarter from April 2011 to June 2011, Central Labour Institute carried out several activities of which important ones are given below.

**Studies**

Safety Audit at Port Facilities in Andhra Pradesh (Bairwa, B.L., Vishvanathan, H., Safety Division, Central Labour Institute, Mumbai)

Safety Audit at a Smelter Plant (Captive Power Plant) in Orissa (Bairwa, B.L., Safety Division; Sharma, S.C., MH&CS Division, Central Labour Institute, Mumbai)

An Ergonomic Study at an Automobile Sub-assembly Line Manufacturing Unit in Maharashtra (Raidas, R.B., Satpute, P.G., Ergonomics & Physiology Division, Central Labour Institute, Mumbai)

Safety Audit at a Chemical Industry in Gujarat (Sharma, S.C., Major Hazard & Chemical Safety Division, Central Labour Institute, Mumbai)

Ventilation Study at a Shaving Blade Manufacturing Industry in Maharashtra (Subhash Chandra, Markar, V.M., Barahate, M., Environmental Engineering Division, Central Labour Institute, Mumbai)

Illumination Study at a Shaving Blade Manufacturing Industry in Maharashtra (Subhash Chandra, Markar, V.M., Barahate, M., Environmental Engineering Division, Central Labour Institute, Mumbai)

**Training Programme**

The Industrial Safety Division conducted a three-week basic training programme for Inspectors of Factories from April 11 to 29, 2011. The programme was attended by fourteen participants.

The Industrial Safety Division conducted a three-week training programme for Safety professionals for getting accreditation from State Govt. authorities as Safety Auditors from June 06 to 24, 2011. The programme was attended by forty three participants from thirty nine organizations.

The Industrial Psychology Division conducted a three-day training programme on *Making Safety Committee More Effective* from June 08 to 10, 2011. The programme was attended by sixteen participants from five organizations.

The Major Hazard & Chemical Safety Division conducted a three-day training programme on *Safe Handling of Chemicals for Safety Committee Members* from May 25 to

27, 2011. Fifteen participants from five organizations attended the programme.

**Workshops/Seminars/Conference**

The Staff Training & Productivity Division conducted a three-day training workshop on *Effective Supervision for Results for Enhancing Safety, Health & Environment in Industry* from May 04 to 06, 2011. Thirteen participants from two organisations attended the workshop.

The Staff Training & Productivity Division conducted a three-day training workshop on *Team Building for Health, Safety & Welfare at Work Place* from June 06 to 08, 2011. Eighteen participants from three organisations attended the workshop.

The Staff Training & Productivity Division conducted a three-day training workshop on *Productivity & Quality Improvement through Effective Employee Participation* from June 21 to 23, 2011. Twenty eight participants from four organizations attended the workshop.

The Major Hazard & Chemical Safety Division conducted a three-day training workshop on *Hazard and Operability Study* from April 05 to 07, 2011. Sixteen participants from ten organizations attended the workshop.

The Environmental Engineering Division conducted a three-day workshop on *Industrial Ventilation for Thermal Comfort & Contaminant Control* from May 24 to 26, 2011. Seven participants from three organizations participated in the workshop

**Paper/Presentations/Talks**

Dr. R.B.Raidas, Director (Industrial Medicine Division) made a presentation on *Asbestosis and Silicosis* in an *Annual Conference of Chief Inspectors of Factories* held at Bhopal from April 24 to 28, 2011.

Dr. S.S.Waghe, Director (Industrial Medicine Division) made a presentation on *Asbestosis and Silicosis* in an *Annual Conference of Chief Inspectors of Factories* held at Bhopal from April 24 to 28, 2011.

**REGIONAL LABOUR INSTITUTE, KANPUR**

During the quarter from April 2011 to June 2011, Regional Labour Institute carried out studies, training programmes etc. which are described here.

**Training Programmes**

The Institute conducted a three-day training programme on *Prevention & Control of Fire in Industries* from April 13 to 15, 2011. The training programme was attended by eight participants representing six organizations.

The Institute conducted a three-day training programme on *Safety & Health in Sugar Industries* from April 26 to 28, 2011. Sixteen participants representing six organizations participated in the programme.

The Institute conducted a three-day training programme on *Occupational Health for Non-Medical Executives* from June 28 to 30, 2011. Twenty four participants representing twelve organizations participated in the programme.

### **REGIONAL LABOUR INSTITUTE, CHENNAI**

During the quarter from April 2011 to June 2011, Regional Labour Institute carried out following technical activities.



#### **Studies**

Safety Audit at a Thermal Power Station in Andhra Pradesh (Elangovan, R.K., Dhende, K.N., Rengaraj, C., Safety Division, Regional Labour Institute, Chennai)

Safety Audit at a Chennai Port in Tamil Nadu (Balasubramanian, K., Nigli, C.M., Safety Division, Regional Labour Institute, Chennai)

Environmental Study at a Cement Industry in Andhra Pradesh (Dhende, K.N., Rengaraj, C., Vasu, G., Industrial Hygiene Division, Regional Labour Institute, Chennai)

Work Environment Study at a Refineries and Petrochemicals Industry in Karnataka (Sreeramulu, A., Vasu, G., Rengaraj, C., Industrial Hygiene Division, Regional Labour Institute, Chennai)

#### **Training Programme**

The Institute conducted a two-day training programme on *Lifting Machineries and Lifting Tackles* on May 10 and 11, 2011. The programme was attended by thirty eight participants comprising of management executives and supervisors.

#### **Workshops/Seminars/Conference**

*3<sup>rd</sup> National Film & Book Exhibition on Occupational Safety, Health and Environment* was organized at RLI, Chennai on April 29, 2011. A total number of two hundred and five participants comprising of management executives, workers, trade union leaders, workers, medical officers, factory inspectors and educational institutions attended the exhibition. Ten publishers and sellers of various safety related books and producers of films participated in the exhibition and displayed their books/CDs in the exhibition.

#### **Paper/Presentations/Talks**

Dr.R.K.Elangovan, Director (Safety), delivered a talk on *National Policy on Safety, Health and Environment at*

*Workplace and Occupational Safety in Industries* for the students of MBA of Panimalar Engineering College, Poonamallee, Chennai on April 04, 2011.

Dr.R.K.Elangovan, Director (Safety), delivered a talk on *Engineering Controls and Predictive Maintenance in Industries to minimize Disasters* at the *Conference on Safe Processing, Waste Management, Storage and Transportation of Chemicals, Petroleum Products and Natural Gas* from May 19 to 21, 2011 organised by NDMA, Ministry of Environment and Forests, Govt. of India & FICCI in Jaipur. The conference was attended by three hundred and fifty management executives.

Dr.R.K.Elangovan, Director (Safety), delivered a talk on *Safe Execution, Legal Concepts and Responsibilities* on June 22, 2011 in a HSE Seminar organized and conducted by EDAC Engineering Ltd., Chennai on June 21 and 22, 2011.

### **REGIONAL LABOUR INSTITUTE, KOLKATA**

During the quarter from April 2011 to June 2011, Regional Labour Institute carried out studies, training programmes etc. which are described here.



#### **Studies**

Safety Audit at a Power & Steel Plant in Orissa (Chattopadhyay, H., Safety Division; Banerjee, S.N., Industrial Hygiene, Regional Labour Institute, Kolkata)

Environmental Monitoring and Medical-Cum-Biochemical study on Mercury at Cell House of a Chloroalkali Plant in West Bengal (Haldar, S.K., Industrial Medicine Division; Banerjee, S.N., Industrial Hygiene Division, Regional Labour Institute, Kolkata)

#### **Training programmes**

The Institute conducted a five-day training programme on *Management of Physical Hazards and Hazardous Wastes in Industries* from April 25 to 29, 2011 for the Executives. Ten candidates from ten organizations attended the programme.

The Institute conducted two-day training programme on May 18 and 19, 2011 for the students of Post Diploma in Industrial Safety Course of Koel Institute of Industrial Safety, Rourkela, Orissa. Thirty participants attended the programme.

The Institute conducted five-day training programme on *Safety in Construction Industry* for the Managers, Engineers, Executives and Supervisors of construction industries from May 13 to 18, 2011. Eight candidates from six organizations attended the programme.

The Institute conducted five-day training programme on *Safety, Health & Environment at Workplace* for Supervisors and Senior Managers from May 21 to 25, 2011. Twenty eight candidates from twelve organizations attended the programme.

The Institute conducted a training programme of five-day duration on *Safety, Security and Fire Fighting in Industries* for the Managers, Engineers, Executives & Supervisors who are looking after safety, security and fire fighting aspects in manufacturing, port and construction industries from June 20 to 24, 2011. Twenty candidates from eight industries attended the programme.

**Paper/Presentations/Talks**

Dr. S. K. Halder, Deputy Director (Industrial Medicine Division) delivered a talk on *Occupational Health Hazards in Construction Industries* to the students of Certificate course in Construction Safety at State Labour Institute, Kolkata on May 06, 2011. Twenty five students attended the talk.

**FILM ARCHIVE ON OCCUPATIONAL SAFETY, HEALTH & ENVIRONMENT AT CENTRAL LABOUR INSTITUTE, MUMBAI**

The Government of India declared the National Policy on Safety, Health and Environment at Workplace on 28<sup>th</sup> February 2009. One of the goals of the National policy is to build and sustain preventive safety and health culture in the country in order to eliminate the hazards at workplace and to enhance the well being of employees in all the sectors of economic activities in our country. To attain this goal, one of the steps taken by Directorate General Factory Advice Service & Labour Institutes (DGFASLI) is to develop a **Film Archive on Occupational Safety, Health and Environment at Central Labour Institute in Mumbai.**

All the Film Producers, Organisations, Industries, Industrial Association, Trade unions, Professional bodies, Government and Non-Government organisations, Educational Institutes etc. are invited to enlist their films on Occupational Safety, Health & Environment (OSHE) in CD, DVD format etc. with the Film Archive for preparing a directory of OSHE films.

Interested Agencies/Individuals may please fill-up the proforma and send to:

**The Director General,  
DGFASLI  
Central Labour Institute,  
N.S.Mankiker Marg, Sion,  
Mumbai 400022**

or E-mail at [editorindosh10@gmail.com](mailto:editorindosh10@gmail.com). The proforma may be downloaded from DGFASLI website at [www.dgfasli.nic.in](http://www.dgfasli.nic.in).

**DGFASLI AT A GLANCE**

The Directorate General Factory Advice Service & Labour Institutes (DGFASLI) is an attached office of the Ministry of Labour & Employment Government of India. DGFASLI organization was set up in 1945 under the Ministry of Labour, Government of India to serve as a technical arm to assist the Ministry in formulating national policies on occupational safety and health in factories and docks and to advise State Governments and factories on matters concerning safety, health, efficiency and well-being of the persons at workplace. It also enforces safety and health statutes in major ports of the country.

The Directorate General Factory Advice Service & Labour Institutes (DGFASLI) comprises:

- Headquarters situated in Mumbai
- Central Labour Institute in Mumbai
- Regional Labour Institutes in Kolkata, Chennai, Faridabad and Kanpur

**Vision of DGFASLI:** DGFASLI envisions emerging as an organization of excellence in creating knowledge, formulating policies, standards and practices to ensure safe and healthy workplaces for all in factories and ports.

**Mission of DGFASLI:** The mission of DGFASLI is to render its expertise in occupational safety and health for evolving safe and healthy workplaces in factories and ports through a process of partnership, guidance, regulatory activities in specific sector and information sharing.

DGFASLI organization comprises of its Headquarters situated in Mumbai, Central Labour Institute (CLI) in Mumbai, four Regional Labour Institutes (RLI) in Chennai, Faridabad, Kanpur & Kolkata and eleven Inspectorate of Dock Safety (IDS) offices located at different ports situated all over the country.

DGFASLI organization consists of a multidisciplinary team of around 129 officers (engineers, doctors, industrial hygienists, physiologists, ergonomists, industrial psychologists, commercial artists etc. and 81 technical staff members.

Various specialty divisions/cells under DGFASLI office and Central Labour Institutes in Mumbai include

- a) Factory Advice Service b) Dock Safety
- c) Construction Safety d) Awards e) Statistics
- f) Industrial Safety g) Industrial Hygiene
- h) Industrial Medicine i) Industrial Physiology & Ergonomics j) Staff Training, Productivity & Small Scale
- k) Industrial Psychology l) Major Hazards & Chemical Safety m) Management Information Services
- n) Environmental Engineering and o) Communication Division.

Armed with the technology, good will of the industrial society and the strength of the dedicated staff, the organization is well prepared to meet the challenges of tomorrow.

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***Safety Audit at Port Facilities in Andhra Pradesh (Bairwa, B.L., Vishvanathan, H., Safety Division, Central Labour Institute, Mumbai)***

The safety audit was conducted of port facilities of an Aluminium company in line with BIS 14489. Critical observations were made from SHE perspective with a view to identify and assess the hazard potential in the plant and its preparedness to meet the requirement. The audit also was aimed to identify deviation and deficiencies from the perspective of safe working conditions and practices. Several recommendations were suggested. few of them were to create better awareness of safety policy among contract workers, strengthen safety organisation, effective functioning of safety committee and training of its members, specific budget allocation for OSH, management of near miss and investigation system to ascertain the trend and for elimination, proper maintenance of statutory registers, training need identification, pre and post evaluation of training programmes, emphasis on "On the Job" learning activity, special attention for house-keeping, further improvement on safe operating procedures, strengthening of work permit management system, improve management of portable fire extinguishers, conducting of rehearsal for on-site emergency plan to test the efficacy and effectiveness in meeting the emergencies etc.

***Safety Audit at a Smelter Plant (Captive Power Plant) in Orissa (Bairwa, B.L., Safety Division; Sharma, S.C., MH&CS Division, Central Labour Institute, Mumbai)***

The Safety Audit was conducted in the captive power plant of an Aluminium company, Angul, with the objective of determining the effectiveness of plant safety and loss prevention programmes, study of existing OSH programmes and to assess the extent to which existing OSH system is confirming with the legal requirements. The audit was conducted broadly in line with BIS 14489. The audit team made questionnaire for collecting information data, conducted site visit, examined records / documents and OSH procedure being followed. Reviewing of plant safety inspection procedures, publicizing the safety policy among the employees for effective compliance, revamping of accident recording and investigation system, effective evaluation of safety training programmes, improvement of housekeeping practices, installation of smoke detectors at vulnerable locations, practicing hazard identification techniques, enhanced preventive measures for the areas where corrosive/toxic and other chemicals are stored, the importance of hazard communication, maintenance of mock drill records, use of safe practices, etc.

***An Ergonomic Study at an Automobile Sub-assembly Line Manufacturing Unit in Maharashtra (Raidas, R.B., Satpute, P.G., Ergonomics & Physiology Division, Central Labour Institute, Mumbai)***

An Ergonomic study was carried out in automobile assemblies which manufacture brake liners of heavy commercial vehicles such as trucks, buses, matadors etc. The study was carried out to apply ergonomic tool kit to identify and quantify ergonomic risk factor for safety and health protection of the workers. In thirteen different assembly lines, one hundred and nineteen workers were sampled by using ergonomics tools such as REBA,

WISHA and work load assessment were observed by anthropometric measurement and photography. It was observed that work load assessment vary from moderate to severe in combined lines, but in SBA line it was found severe warranting early ergonomic control. Result shows maximum pain profile of workers on the body parts and below waist line indicating standing job without effective rest allowances as common ergonomic factors. Recommendations such as redesigning, reorganizing and revamping of the workpattern to suit the anthropometric and biometric profiles of the workers especially of SBA line were given to the management.

***Safety Audit at Chemical Industry in Gujarat (Sharma, S.C., MH&CS Division, Central Labour Institute, Mumbai)***

The document is a report of safety audit carried out in a production area, bulk storage area, raw material and finished product area, electrical section etc. The report reveals that the management is quite keen in managing the safety and health matters, like appointment of qualified fire officer, proper housekeeping, electrical safety, safety of storage tanks, pipe lines safety, chlorine handling, hydrogenation, discharge of static electricity, machine guarding, etc. The main products of the plant are different types of refrigerant gases Boron trifluoride, Sulphuric acid, Oleum and Hydrogen Fluoride. The report lists about one hundred and twenty five suggestions.

***Ventilation Study in a Shaving Blade Manufacturing Industry in Maharashtra (Subhash Chandra, Markar, V.M., Barahate, M., Environmental Engineering Division, Central Labour Institute, Mumbai)***

The study on assessment of ventilation level and thermal stress was conducted in a metallic shaving blade manufacturing industry, a large private sector company with a workforce of about 1000 employees working in three shifts. Air velocity and thermal parameters were recorded by pre-calibrated instrument Quest Temp 36<sup>0</sup>, USA make. Raw material used by the unit is metallic steel sheets. The manufacturing process involves number of stages of heat treatment, cleaning, grinding, printing, inspection and packing. The plant has plenty of open spaces for natural ventilation supported by efficient mechanical ventilators. The study suggests that the thermal indices like ET, CET and WBGT are below permissible limit value i.e., 30<sup>0</sup> C. Recommendations suggested were to conduct training programme for concerned engineers, technicians and workers.

***Illumination Measurement Study in a Shaving Blade Manufacturing Industry in Maharashtra (Subhash Chandra, Markar, V.M., Barahate, M., Environmental Engineering Division, Central Labour Institute, Mumbai)***

Data was collected for measurement of existing illumination levels in the plant on different selected locations and for giving suggestions for improvement of the same for enhancing safety and efficiency on the shopfloor. The instrument used for data recording was Exttech light meter and measurement was recorded in unit Lux. Observations readings were collected from as many as fifty locations during day and night times. The study reveals that illumination levels at 90% of the locations



covered were within permissible limit values. Recommendations offered for the rest of the locations include fixing of appropriate type and sufficient number of luminaries with proper distance and height. Suggestions were also given for avoiding glare or reflecting lights and proper maintenance of the luminaries in the work area.

**Safety Audit of a Steel Manufacturing Industry in Orissa (H. Chattopadhyay, Dr. S. N. Banerjee, Regional Labour Institute, Kolkata)**

The audit was conducted in a factory producing Steel from raw iron. The major hazards of the company are Toxic Exposure, Fire and Explosion, Cold Burning, Dust Exposure, etc. Major observations were poor emergency measures, inadequate medical facilities, lack of training facilities & inadequate fire fighting facilities. Poor road conditions, unorganized parking of trucks/trailers and poor dust control systems have made the industry more vulnerable. The recommendations were given to improve the working conditions, housekeeping and maintenance of all critical equipments. It is further recommended for structural modification in some Plants like LPG & Cryogenic Storage, loading/ unloading bay and Pulverized Coal Injection Plant.

**Environmental Monitoring and Medical-Cum-Biochemical study on Mercury in Cell House of a Chloroalkali plant at West Bengal (Dr. S. K. Haldar, Deputy Director (Medical) & Dr. S. N. Banerjee, Deputy Director (IH), Regional Labour Institute, Kolkata)**

The study was conducted in a Chloroalkali plant which produces alkali through electrolysis of brine solution using mercury cathode and T.S.I anode. Mercury levels in the air of the cell house were measured. Further, workers exposed to air-born mercury were examined. Mercury content in their blood and urine were measured along with clinical examinations of the exposed workers to find out sign and symptoms of mercury poisoning. The study reveals that mercury levels in air of cell house ranges in between 0.0065 to 0.0440 mg/m<sup>3</sup> and in blood & urine of exposed workers range 40 to 145 µg/l and 3.52 to 65.88 µg/l respectively. In two locations in the cell House the levels of air-born mercury have exceeded the permissible level of 0.025 mg/l and mercury contents in blood of all the workers have exceeded the permissible of 15 µg/l. Nearly 50% of the exposed workers, urinary-mercury has shown higher level than permissible limit of 15 µg/l. Out of 23 workers clinically examined, 30.43% has been found suffering from hypersalvatio, 8.69% is suffering from gingivitis and 4.34% is from hand tremor. Among the exposed workers, 56.52% workers have shown the presence of albumin in their urine. Enhancement of ventilation as well as better maintenance of the cell house has been recommended to reduce the exposure from mercury. It was suggested to monitor the mercury level in air periodically along with clinical examination of the workers. It was also suggested to deploy first aid trained personnel with all first aid equipment including rescue measures.

**Safety Audit at Thermal Power Station in Andhra Pradesh (Elangovan, R.K., Dhende, K.N., Rengaraj, C., Safety Division, Regional Labour Institute, Chennai)**

A Safety Audit was conducted at Thermal Power Plant with a view to identify the hazards so that the management can devise suitable procedures and methods for enhancing safety in the industry. The Safety Audit was conducted as per BIS: 14489:1998. An opening meeting was conducted at the beginning of the Safety Audit. At the end of the Safety Audit, a closing meeting was conducted and the findings were finalized in the closing meeting. The Safety Audit covered all the management and technical elements outlined in the BIS Standard 14489:1998. The major findings of the Safety Audit pertains to Coal handling, construction safety, lightning protection, preparing SOPs and SMPs dust control, access control, housekeeping, emergency preparedness, LPG Safety, chlorine safety and the need for conducting heats stress, noise, illumination and work environment monitoring study in the factory.

**Safety Audit in Chennai Port in Chennai (Balasubramanian, K., Nigli, C.M., Safety Division, Regional Labour Institute, Chennai)**

The major recommendations of the Safety Audit were to establish a full fledged safety department headed by an officer of Head of the Department rank who will directly report to the Chairman of the Port, to constitute departmental safety committees to sort out various OSH issues, organizing refresher training programmes on OSH for the port personnel including stevedoring companies and other port users. Priority should be given for maintaining all the first aid posts round the clock manned by personnel qualified in first aid. Occupational Health Centre shall be manned by a full time doctor specialized in occupational health. The port shall develop suitable checklists for improvement of the OSH inspection system. Ensuring the strict use of necessary personal protective equipment for all the dock workers, the port shall establish a system of checking/reviewing the efficacy/adequacy of the automatic dust suppression system in the iron ore handling plant and coal stack yard in conjunction with monitoring of dust level and take measures to improve the system, maintenance of roads, speed breakers, periodical painting of sign boards, fixation of optimum working hours for the drivers/operators/cleaners of the transport equipment in consultation with the transport operators, truck owners, unions etc., effective signaling system at all the intersections of the road and railway systems, undertaking the repairs of the fire fighting system to ensure the effective functioning of the fire fighting system in case of any major fires, preparation of an updated emergency action plan in line with the provisions made under the Dock Safety Statutes, etc.

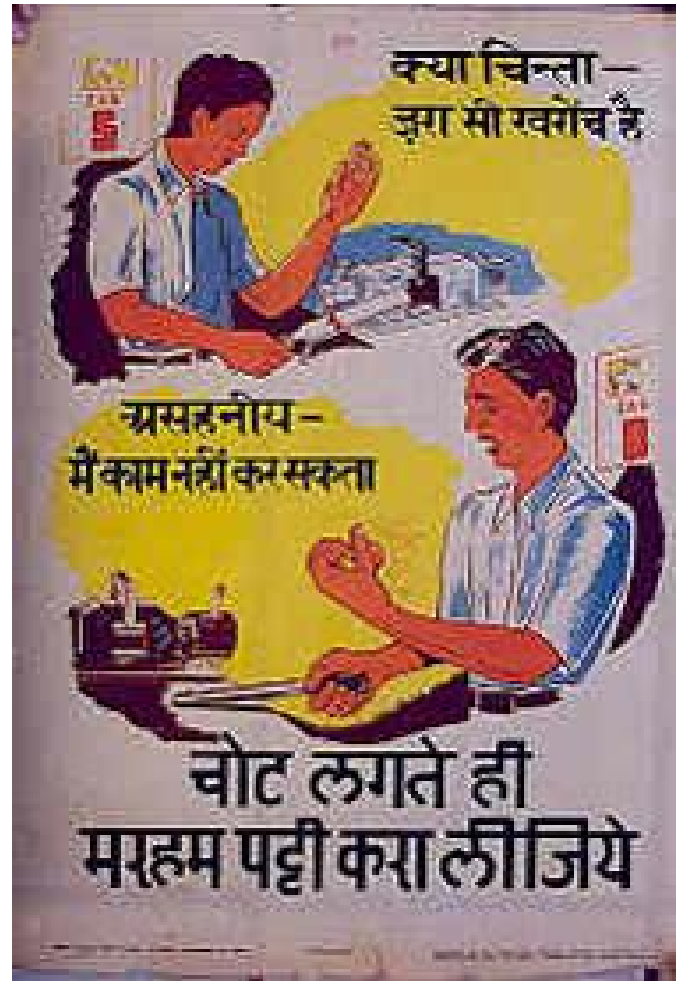
**Environmental Study in Cement Industry in Andhra Pradesh (Dhende, K.N., Rengaraj, C., Vasu, G., Industrial Hygiene Division, Regional Labour Institute, Chennai)**

The industry is engaged in the production of AC Cement Sheet and other moulded accessories for roofing and other applications. The process involves use of asbestos fibre in bulk quantity along with cement, fly ash and pulp waste as raw materials. Samples of airborne asbestos fibres at identified locations were collected by using the standard method as recommended by BIS/AIA. Airborne

levels of asbestos fibres at all locations in production area and general atmosphere around the plant have been found well below the permissible level i.e. 1 fibre/cc. However, remedial measures which were suggested in the report of the previous study such as prompt repair of damaged fibre bags, periodic checking of AC Sheets in wet conditions sprinkling of water while manually breaking the sheet scrap etc. are required to be implemented on regular basis.

**Work Environment Study at Refineries and Petrochemicals Industry in Karnataka (Sreeramulu, A., Vasu, G., Rengaraj, C., Industrial Hygiene Division, Regional Labour Institute, Chennai)**

Refinery and Petro Chemicals Industry is engaged in the production of various petroleum products by refining the crude oil. This is one of the major refineries with a capacity of more than 12.5 MMTPA. The samples of various airborne contaminants were collected and analysed using standard methodology. The result indicated that the concentration of most of the airborne contaminants eg. Ammonia, hydrogen, sulphide, oil mist, ethyl mercaptan, hexane phenol, sulphur dioxide, chlorine, asbestos, benzene, xylene, tonene in almost all the areas were found well below their respective PLEs. This is perhaps, attributed to the fact that the plant as a whole is well maintained. Further, as most of the units are located in open air, the minor gaseous leakages, if any, are quickly dispersed in air. However, certain remedial measures have been suggested to further improve the environmental conditions such as the process equipment e.g. Valves, pumps, glands, joints, etc. to be kept well maintained through a proper preventive maintenance programme to minimize the leakage and prevent the gaseous emissions, continuous monitoring system of sulphur di oxide.



**इंडोशनेट**

भारत सरकार का श्रम एवं रोज़गार मंत्रालय व्यवसायिक सुरक्षा और स्वास्थ्य सूचना प्रणाली पर इंडोशनेट नामक राष्ट्रीय नेट वर्क का विकास कर रहा है। श्रम मंत्रालय का एक संबद्ध कार्यालय, कारखाना सलाह सेवा एवं श्रम संस्थान महानिदेशालय इस नेट वर्क प्रणाली के सफल कार्यान्वयन में सहायता देता है। इस नेट वर्क का उद्देश्य व्यवसायिक सुरक्षा और स्वास्थ्य संबंधी राष्ट्रीय जानकारी सुदृढ़ करना और लाभहानि रहित आधार पर इसका आदान-प्रदान करना है ताकि हमारे समग्र सूचना स्रोतों का परस्पर लाभ के लिए उपयोग हो सके। आपस में सूचना या जानकारी की यह सहभागिता केवल राष्ट्रीय स्तर तक ही सीमित नहीं होगी बल्कि इसमें अंतर्राष्ट्रीय स्रोत भी शामिल होंगे। इस जानकारी का आदान-प्रदान ई-मेल के साथ-साथ डाक/कुरियर सेवा द्वारा किया जाएगा। यदि औद्योगिक संगठनों, संस्थानों, उद्योग संघों, मज़दूर संघों, व्यवसायिक निकायों और ग़ैरसरकारी संगठनों के पास व्यवसायिक सुरक्षा स्वास्थ्य संबंधी कोई जानकारी हो और वे राष्ट्रीय और अंतर्राष्ट्रीय स्तर पर उक्त जानकारी बाँटना चाहते हों तो कारखाना सलाह सेवा एवं श्रम संस्थान महानिदेशालय की ओर से इस नेट वर्क के सदस्य के रूप में भाग लेने के लिए उनका स्वागत है। इच्छुक इकाइयाँ संगठनात्मक रूपरेखा संबंधी प्रोफार्मा के लिए महानिदेशक, कारखाना सलाह सेवा एवं श्रम संस्थान महानिदेशालय, केंद्रीय श्रम संस्थान भवन, एन.एस.मंकीकर मार्ग, सायन, मुंबई-४०० ०२२ से संपर्क करें।

टिप्पणी : जिन इकाइयों ने हमारे पहले आग्रह के संदर्भ में संपर्क किया है और निर्धारित प्रोफार्मा में रूपरेखा भेज दी है, वे दुबारा आवेदन न करें।

CIS (from the French name, Centre International d'information de sécurité et d'hygiène du travail) i.e. International Occupational Safety and Health Information Centre, is a part of the International Labour Office, Geneva, Switzerland.

The mission of CIS is to collect world literature that can contribute to the prevention of occupational hazards and to disseminate this information at an international level. CIS imparts to its users the most comprehensive and up-to-date information in the field of Occupational Safety and Health. The work of CIS is supported by a worldwide Safety and Health information exchange network, which includes over 91 Centres.

Central Labour Institute, Mumbai has been designated as the CIS National Centres of India. CIS can offer you rapid access to comprehensive information on occupational safety and health through its abstracts on latest OSH publications, the CIS Thesaurus and ILO Bulletin 'Safety and health at Work'.

#### EXCERPTS FROM CIS-DOC

**Title: Factors on working conditions and prolonged fatigue among physicians in Japan.**

**CIS Accession Number: CIS 09-1170**

**Abstract:** The objective of this study was to determine the working condition factors associated with prolonged fatigue among physicians in Japan. A questionnaire on working conditions and fatigue was mailed to 478 physicians (377 men and 101 women) with more than three years of experience in clinical practice. Multiple regression analysis was used to examine the multivariate relationship between the variables and prolonged fatigue. High workload was positively associated and better career satisfaction was negatively associated with prolonged fatigue. Prolonged fatigue was negatively associated with better relationships with other physicians and staff for male physicians. Other findings are discussed. (110036)

**Title: Mental ill-health and the differential effect of employee type on absenteeism and presenteeism**

**CIS Accession Number: CIS 09-1178**

**Abstract:** This study examined the relationship between employee psychological distress, employee type (white-collar and blue-collar) and productivity. Using the Health and Performance at Work Questionnaire in a sample of 60,556 full-time Australian employees, it examined the impact of psychological distress according to the Kessler scale (K6) on employee productivity. High K6 score resulted in a presenteeism increase of 6% in both blue and white-collar employees. Among white-collar workers, there was no statistically significant difference in absenteeism rates by low and high psychological distress. However, the same comparison for blue-collar workers showed that high psychological distress results in an 18% increase in absenteeism rates. (110097)

**Title: A web-based approach to managing stress and mood disorders in the workforce**

**CIS Accession Number: CIS 09-1188**

**Abstract:** The objective of this study was to evaluate the effectiveness of a web-based multimedia health promotion programme for the workplace, designed to help reduce stress and the risk of depression, anxiety and substance abuse. Using a randomized controlled trial design, 309 working adults were randomly assigned to the web-based intervention group or to a control group. All participants were assessed on multiple self-reported outcomes before and after the intervention. Relative to controls, the web-based group reduced their stress, increased their knowledge of depression and anxiety, developed more positive attitudes toward stress treatment and adopted a more controlled approach to alcohol consumption. (110087)

**Title: The burden of cancer at work: Estimation as the first step to prevention**

**CIS Accession Number: CIS 09-1007**

**Abstract:** The aim of this study was to estimate the current burden of cancer in the United Kingdom attributable to occupational factors, and identify the most important carcinogenic agents, industries and occupations. Mortality and incidence rates were estimated for bladder, lung, non-melanoma skin, and sinonasal cancers, leukaemia and mesothelioma for IARC Group 1 and 2A carcinogens. Data were obtained from published literature and national cancer registries. Among cancer deaths, 4.9% were estimated to be attributable to occupational factors (8% among men, 1.5% among women). Incidence estimates were 4.0% (6.7% among men and 1.2% among women). Asbestos contributed over half the occupational deaths. Other findings reported include the most common carcinogens and the sectors and occupations with the largest rates of cancer deaths and incidences. (110021)

**Title: Different course of silicosis in four brothers of one family**

**CIS Accession Number: CIS 09-1009**

**Abstract:** Silicosis remains a common occupational respiratory disease. Four cases of silicosis which developed after a relatively short occupational exposure to respirable silica among the members of one family are described. Four young Lithuanian brothers worked illegally abroad in mining in one of European countries. All of them were employed together in the same working conditions but for different work durations. One of the brothers died due to the acute form of the disease (lipoproteinosis). Two of the brothers suffered from simple nodular silicosis, and the fourth brother developed very early nodular silicosis and small airway dust disease. A one year follow-up revealed moderate/severe worsening of the disease in all surviving brothers. (110030)

**TRAINING CALENDAR FOR THE YEAR 2011: DGFASLI**

**CENTRAL LABOUR INSTITUTE**  
**N.S.MANKIKER MARG, SION, MUMBAI – 400022**  
**Telephone: 91-22-24092203, Fax: 91-22-24071986/24033995**  
**Visit us at: [www.dgfasli.nic.in](http://www.dgfasli.nic.in)**

S.No	Title of the Programme	Period	Coordinator (Technical)
1.	Advanced Diploma in Industrial Safety (ADIS) 2011-12: First Teaching Term	July 19 – Oct 21, 2011	S Bharathi
2.	Training programme on Safety & Health Management in Process Industries.	July, 20-22	S.C. Sharma
3.	Collaborative Training Programme with NSC-Maharashtra Chapter on Industrial Safety	Aug. 01 – 03	S. Bharathi
4.	Workshop on Industrial Noise	Aug. 09-11	Subhash Chandra
5.	Workshop on Training Methodology for Trainers in Safety, Health & Environment	Aug. 17-19	N.K. Rustagi
6.	Training workshop on Effective Implementation of OHS-MS in Manufacturing Industries	Aug. 23-25	R.N. Meena
7.	Training Programme for Nurses, Health / Medical Assistants on 'Occupational Health Practices'	Sept. 26-30	Dr.S.S.Waghe
8.	Workshop on Selection & Quality Assurance for Effective Use of Personal Protective Equipments.	Oct. 03-05	Mrs. M.K.Mandre
9.	Training Workshop on TQM, Productivity & Quality Improvements	Oct., 11-13	R.N.Meena
10.	Advanced Trg. programme for Industrial Doctors	Oct., 17-21	Dr.S.S. Waghe
11.	Workshop on Hazards & Operability (HAZOP) Study	Oct., 19-21	S.C. Sharma
12.	One Month Specialized Certificate Course in Safety and Health for Supervisory Personnel Engaged in Hazardous Process Industries.	Nov. 01 -30	N.K. Rustagi
13.	Refresher Course for Senior Inspectors of Factories	Nov. 07-18	S. Bharathi
14.	Impact of Environmental Pollutants & their Control at Workplace	Nov., 21-23	Subhash Chandra
15.	Collaborative Training Programme with NSC-Maharashtra.	Nov.,23-25	S. Bharathi
16.	Workshop on Industrial Noise	Nov.,28-30	Subhash Chandra
17.	AFIH Course for Doctors	Dec.,11 to Feb. 28 2012	Dr. S.S.Waghe
18.	ADIS 2011 – 12 : 2 <sup>nd</sup> Teaching Term (continued)	Nov.,21, 2011 to May 05, 2012	S. Bharathi
19.	Workshop on Monitoring of Work Environment and its Control in Industries.	Dec., 07-09	Mrs.M.K. Mandre
20.	Training programme on Safety in Storage, Handling and Management of Hazardous substances in Process Industries	Dec., 14-16	S.C. Sharma
21.	Training workshop on Productivity & Quality Improvement through Effective Employee Participation	Dec., 20-22	R.N. Meena

**REGIONAL LABOUR INSTITUTE**  
**SARVODAYA NAGAR, KANPUR - 208 005**  
**Telephone: 91-512-2218691/92, 2218745, Fax: 91-512-2215112**  
**E-mail Address: [rli\\_Kanpur@vsnl.net](mailto:rli_Kanpur@vsnl.net), [rlikanpur@hotmail.com](mailto:rlikanpur@hotmail.com)**

S.No	Title of the Programme	Period	Coordinator
1.	Training Programme on Chemical Safety for Safety Committee Members	July 05-08	Dr. Brij Mohan
2.	Post Diploma Course on Industrial Safety 2011-2012	July 2011 - March 2012	K.Srivastava
3.	Training Programme On Testing & Examination of Lifting Machines & Pressure Vessels	August 22-26	G.S.Pandey
4.	Training Programme on Safety & Law	September 06-08	G.S.Pandey
5.	Orientation Programme on Occupational Health for Para-Medical Staff	September 13-15	Dr.C. Bhattacharya
6.	Workshop on Monitoring of Airborne Contaminants of work place & their Control	October 11-13	Dr. Brij Mohan
7.	One Month Certificate Course on Safety & Health	November 01- 30	A.K.Chakraborty
8.	Workshop on Safety Audit	December 13-15	A.K.Chakraborty
9.	Training Programme on Process Safety Management for Inspectors of Factories	December 19-23	Dr. Brij Mohan

**TRAINING CALENDAR FOR THE YEAR 2011: DGFASLI**

<b>REGIONAL LABOUR INSTITUTE</b> <b>TTTI P.O. THARAMANI, ADYAR, CHENNAI - 600 113</b> <b>Telephone: 91-44-22350737,25220888, Fax: 91-44-22355690</b> <b>E-mail Address: <a href="mailto:rlic@vsnl.net">rlic@vsnl.net</a></b>			
S.No	Title of the Programme	Period	Coordinator
1.	One year Diploma course in Industrial Safety	July 2011 – April 2012	Dr. R.K. Elangovan
2.	Training Programme on Occupational Safety and Health in Construction Industries	July 26-27	K.Balasubramanian
3.	Training Programme on Safety Audit	August 24-26	C.M.Nigli
4.	Training Programme on Major Accident Hazard Control in Industries for Inspectors of Factories	September 20 -23	Dr. S.B.Mishra
5.	Training programme on Management of Hazardous Substances in Chemical Industries	November 08-11	Dr. S.B.Mishra
6.	Training Programme on Occupational Safety and Health in Construction Industries	December 07-08	K.Balasubramanian
7.	Training Programme on Dispersion Modelling	December 22-23	Dr. S.B.Mishra & N. Varadharajan
<b>REGIONAL LABOUR INSTITUTE</b> <b>LAKE TOWN, KOLKATA - 700 089</b> <b>Telephone: 91-033-25343254, 25342732 Fax: 91-033-25348182</b> <b>E-mail Address: <a href="mailto:regi_876109@bsnl.in">regi_876109@bsnl.in</a></b>			
S.No	Title of the Programme	Period	Coordinator
1.	One year Diploma in Safety Engineering Course	July 15, 2011 to June 30, 2012	Shri S.Dutta Chowdhury.
2.	Safety Health & Environment at Workplace	July 26- 29	Shri H. Chattopadhyay
3.	Training Programme on Chemical Safety	August 8-12	Shri U.K.Das
4.	Identification, Evaluation and Control of Hazards in Industries.	August, 22-26	Dr.S.N.Banerjee
5.	Safety in Construction Industries	September 26 -30	Shri U.K.Das
6.	Safety & Health Awareness programme for members of Safety Committee	October, 10-14	Shri S.Dutta Chowdhury
7.	“Occupational Health and environmental Medicine for Medical & non-medical executives of the industries”	October 17-21	Dr. S.K.Haldar
8.	Workers Development Programme on Health	November 7- 9	Dr. S.K.Haldar
9.	Industrial Safety	October, 31 to November, 4	Shri S.Dutta Chowdhury
10.	One Month Specialized Certificate Course in "Safety & Health" for Supervisory working in Hazard Industries	November 14 - December 13	Shri S.Dutta Chowdhury
11.	Associate Fellow of Industrial Health	December 01, 2011 – February 28, 2012	Dr. S.K.Haldar
<b>REGIONAL LABOUR INSTITUTE</b> <b>SECTOR 47, FARIDABAD (HARYANA) – 121 003</b> <b>Telephone: 0129-246800-299 Fax: 0129-2737064</b> <b>E-mail Address: <a href="mailto:rlifaridabad@yahoo.com">rlifaridabad@yahoo.com</a></b>			
S.No	Title of the Programme	Period	Coordinator
1.	Occupational Hazards and their Management	July, 20-22	Rajeev Shukla
2.	One Year Post Diploma in Industrial Safety (PDIS)	July 2011 – May, 2012	M.R. Rajput
3.	Developing Positive Safety Culture	August 17-19	Dr. Avneesh Singh
4.	Management of Safety Health and Environment at Workplace	September 7-9	S.K.Dwivedi
5.	Storage, Handling & Management of Hazardous substances	October 19-21	M.R. Rajput
6.	Occupational Safety and Health in Construction Industry	November 23-25	Rajeev Shukla

- Training programme brochures will be mailed sufficiently in advance, specifying the dates of commencement of course, its venue etc., to the organisations as per mailing list available.
- Course-coordinator may be contacted for details such as training programme dates, venue, programme contents, level of participants, course fee and its payment etc.
- Admission to the course will be restricted to 20 participants on First-Come-First-Served basis. Participants are not allowed to attend the training course without written confirmation by the course-coordinator.
- Limited Hostel Accommodation on sharing and chargeable basis will be available on 'First-Come-First-Served' basis.

# कारखाना सलाह सेवा और श्रम संस्थान महानिदेशालय के अधिष्ठान

## ESTABLISHMENTS OF DIRECTORATE GENERAL FACTORY ADVICE SERVICE & LABOUR INSTITUTES

